AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. – 3. (canceled).

4. (previously presented): A misfire detecting apparatus for an internal combustion engine comprising:

an operating condition detector that is configured to detect engine operating conditions inclusive of an engine rotation speed; and

a calculating section that is configured to:

judge whether a misfire occurred, based on the engine rotation speed detected by said operating condition detector;

output a misfire judgment signal;

calculate diagnosis data indicating a variation of said engine rotation speed;

calculate a threshold based on said engine operating conditions;

judge whether a misfire occurred, based on a comparison between said diagnosis data and said threshold;

calculate a correction value for correcting said threshold based on data indicating an average correlation between said diagnosis data and said threshold, to correct said threshold with said correction value; and

calculate a correction value, which corrects said threshold to be larger as said diagnosis data averagely approaches said threshold.

5. (previously presented): A misfire detecting apparatus for an internal combustion engine comprising:

an operating condition detector that is configured to detect engine operating conditions inclusive of an engine rotation speed; and

a calculating section that is configured to:

judge whether a misfire occurred, based on the engine rotation speed detected by said operating condition detector;

output a misfire judgment signal;

calculate diagnosis data indicating a variation of said engine rotation speed;

calculate a threshold based on said engine operating conditions;

judge whether a misfire occurred, based on a comparison between said diagnosis data and said threshold;

calculate a correction value for correcting said threshold based on data indicating an average correlation between said diagnosis data and said threshold, to correct said threshold with said correction value; and

eliminate said diagnosis data and said threshold when said diagnosis data is equal to or above said threshold, from samples for calculating said data indicating the average correlation.

6. (previously presented): A misfire detecting apparatus for an internal combustion engine according to claim 5, wherein said calculating section is also configured to prohibit an update of said correction value on the basis of said data indicating the average correlation, when the number of samples of said diagnosis data and said threshold used for the calculation of said data indicating the average correlation is less than a predetermined value.

7. (currently amended): A misfire detecting apparatus for an internal combustion engine according to ~~claim 1~~ claim 4, wherein said calculating section is also configured to cancel the misfire judgment, based on said data indicating the average correlation between said diagnosis data and said threshold.

8. (previously presented): A misfire detecting apparatus for an internal combustion engine comprising:

an operating condition detector that is configured to detect engine operating conditions inclusive of an engine rotation speed; and

a calculating section that is configured to:

judge whether a misfire occurred, based on the engine rotation speed detected by said operating condition detector;

output a misfire judgment signal;

calculate diagnosis data indicating a variation of said engine rotation speed;

calculate a threshold based on said engine operating conditions;

judge whether a misfire occurred, based on a comparison between said diagnosis data and said threshold;

calculate a correction value for correcting said threshold based on data indicating an average correlation between said diagnosis data and said threshold, to correct said threshold with said correction value;

wherein said calculating section is configured to:

cancel the misfire judgment, based on said data indicating the average correlation between said diagnosis data and said threshold; and

prohibit said cancellation process, when a misfire frequency during a period of time in which said data indicating the average correlation is obtained, is equal to or above a predetermined value.

9. (previously presented): A misfire detecting apparatus for an internal combustion engine comprising:

an operating condition detector that is configured to detect engine operating conditions inclusive of an engine rotation speed; and

a calculating section that is configured to:

judge whether a misfire occurred, based on the engine rotation speed detected by said operating condition detector;

output a misfire judgment signal;

calculate diagnosis data indicating a variation of said engine rotation speed;

calculate a threshold based on said engine operating conditions;

judge whether a misfire occurred, based on a comparison between said diagnosis data and said threshold;

calculate a correction value for correcting said threshold based on data indicating an average correlation between said diagnosis data and said threshold, to correct said threshold with said correction value; and

obtain said data indicating the average correlation, as an average value per the predetermined number of ignitions.

10. – 13. (canceled).

14. (previously presented): A misfire detecting method for an internal combustion engine comprising the steps of:

detecting engine operating conditions inclusive of an engine rotation speed;

calculating diagnosis data indicating a variation of said engine rotation speed;

calculating a threshold based on said engine operating conditions;

judging whether a misfire occurred, based on the comparison between said diagnosis data and said threshold;

calculating data indicating an average correlation between said diagnosis data and said threshold;

calculating a correction value for said threshold based on said data indicating the average correlation between said diagnosis data and said threshold; wherein said correction value corrects said threshold to be larger as said diagnosis data averagely approaches said threshold; and

correcting said threshold with said correction value.

15. (previously presented): A misfire detecting method for an internal combustion engine comprising the steps of:

detecting engine operating conditions inclusive of an engine rotation speed;

calculating diagnosis data indicating a variation of said engine rotation speed;

calculating a threshold based on said engine operating conditions;

judging whether a misfire occurred, based on the comparison between said diagnosis data and said threshold;

calculating data indicating an average correlation between said diagnosis data and said threshold;

calculating a correction value for said threshold based on said data indicating the average correlation between said diagnosis data and said threshold; and

correcting said threshold with said correction value,

wherein said step of calculating the data indicating the average correlation comprises the step of:

eliminating said diagnosis data and said threshold when said diagnosis data is equal to or above said threshold, from samples for calculating said data indicating the average correlation.

16. (previously presented): A misfire detecting method for an internal combustion engine according to claim 15, further comprising the step of:

prohibiting the cancellation of the misfire judgment on the basis of said data indicating the average correlation, when the number of samples of said diagnosis data and said threshold used for the calculation of said data indicating the average correlation is less than a predetermined value.

17. (currently amended): A misfire detecting means for an internal combustion engine according to ~~claim 11~~ claim 14, further comprising the step of:

canceling the misfire judgment, based on said data indicating the average correlation between said diagnosis data and said threshold.

18. (previously presented): A misfire detecting method for an internal combustion engine comprising the steps of:

detecting engine operating conditions inclusive of an engine rotation speed;

calculating diagnosis data indicating a variation of said engine rotation speed;

calculating a threshold based on said engine operating conditions;

judging whether a misfire occurred, based on the comparison between said diagnosis data and said threshold;

calculating data indicating an average correlation between said diagnosis data and said threshold;

calculating a correction value for said threshold based on said data indicating the average correlation between said diagnosis data and said threshold;

correcting said threshold with said correction value;

canceling the misfire judgment, based on said data indicating the average correlation between said diagnosis data and said threshold; and

prohibiting the cancellation of the misfire judgment, when a misfire frequency during a period of time in which said average correlation is obtained, is equal to or above a predetermined value.

19. (previously presented): A misfire detecting method for an internal combustion engine comprising the steps of:

detecting engine operating conditions inclusive of an engine rotation speed;

calculating diagnosis data indicating a variation of said engine rotation speed;

calculating a threshold based on said engine operating conditions;

judging whether a misfire occurred, based on the comparison between said diagnosis data and said threshold;

calculating data indicating an average correlation between said diagnosis data and said threshold;

calculating a correction value for said threshold based on said data indicating the average correlation between said diagnosis data and said threshold; and

correcting said threshold with said correction value,

wherein said step of calculating the data indicating the average correlation comprises the step of:

calculating said data indicating the average correlation, as an average value per the predetermined number of ignitions.